

bulkhead minimizes the risk of the ballast penetrating the bulkhead in a collision.

(c) Solid fixed ballast may not be removed from a vessel or relocated unless approved by the cognizant OCMI except that ballast may be temporarily moved for a vessel examination or repair if it is replaced to the satisfaction of the OCMI.

(d) Water ballast, either as an active system or permanent, must be approved by the Commanding Officer, Marine Safety Center.

## **PART 179—SUBDIVISION, DAMAGE STABILITY, AND WATERTIGHT INTEGRITY**

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AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 2103, 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85-080, 61 FR 971, Jan. 10, 1996, unless otherwise noted.

### **Subpart A—General Provisions**

#### **§ 179.115 Applicability to existing vessels.**

An existing vessel must comply with the subdivision, damage stability, and watertight integrity regulations which were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

### **Subpart B—Subdivision and Damage Stability Requirements**

#### **§ 179.210 Collision bulkhead.**

(a) A vessel of more than 19.8 meters (65 feet) in length must have a collision bulkhead.

(b) A vessel of not more than 19.8 meters (65 feet) in length must have a collision bulkhead if it:

- (1) Carries more than 49 passengers;
- (2) Operates on exposed waters;
- (3) Is of more than 12.2 meters (40 feet) in length and operates on partially protected waters; or
- (4) Is constructed of wood on or after March 11, 2001, and operates in cold water.

(c) A double-ended ferry required to have a collision bulkhead must have a collision bulkhead at each end of the vessel.

#### **§ 179.212 Watertight bulkheads for subdivision.**

(a) A vessel of not more than 19.8 meters (65 feet) in length must comply with § 179.220 of this part if it:

- (1) Carries more than 49 passengers; or
- (2) Is constructed of wood on or after March 11, 2001, and operates in cold water.

As an alternative, the above vessels may comply with the intact stability requirements of §§ 170.170, 170.173, 171.050 and 171.055 of this chapter, and comply with the Type II subdivision requirements of §§ 171.070 through 171.073 in subchapter S of this chapter.

(b) A vessel of more than 19.8 meters (65 feet) in length must comply with the Type II subdivision requirements of §§ 171.070 through 171.073 in subchapter S of this chapter.

(c) A vessel that carries more than 12 passengers on an international voyage must meet the Type II subdivision requirements of §§ 171.070 through 171.073 in subchapter S of this chapter.

#### **§ 179.220 Location of watertight bulkheads for subdivision.**

(a) The maximum distance between adjacent main transverse watertight bulkheads on a vessel, required by § 179.212(a) of this part to comply with this section, must not be more than the smaller of the following:

**§ 179.220**

- (1) One third of the length of the bulkhead deck; or
- (2) The distance given by the following equation:

$$d = \frac{(F)(f)(L)}{D}$$

where:

d=the maximum length of the bulkhead deck in meters (feet) between adjacent main transverse watertight bulkheads;

F=the floodable length factor from Table 179.220(a);

f=the effective freeboard in meters (feet) calculated for each pair of adjacent bulkheads in accordance with paragraph (b) of this section;

L=Length Over Deck in meters (feet) measured over the bulkhead deck; and

D=the depth in meters (feet), measured amidships at a point one-quarter of the maximum beam out from the centerline, from the inside of the

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bottom planking or plating to the level of the top of the bulkhead deck at side as shown in Figure 179.220(a).

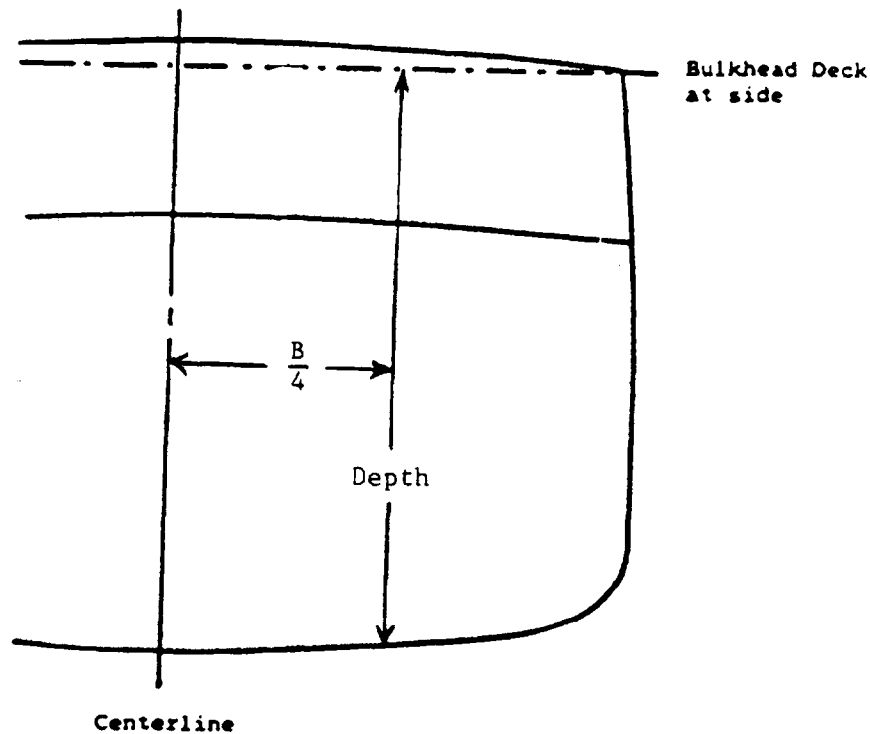
TABLE 179.220(A).—TABLE OF FLOODABLE LENGTH FACTORS

(d/L)×100	F
0–15	0.33
20	0.34
25	0.36
30	0.38
35	0.43
40	0.48
45	0.54
50	0.61
55	0.63
60	0.58
65	0.53
70	0.48
75	0.44
80	0.40
85	0.37
90–100	0.34

NOTE 1: Where: d=distance in meters (feet) from the mid-point of the compartment to the forward-most point on the bulkhead deck excluding sheer; and L=length over deck in meters (feet) measured over the bulkhead deck.

NOTE 2: Intermediate values of floodable length factor may be obtained by interpolation.

Figure 179.220(a)

Transverse Location for Measuring Depth (D)

(b) The effective freeboard for each compartment is calculated by the following equation:

$$f = (a+b)/2$$

where:

f = the effective freeboard in meters (feet).

a = the freeboard in meters (feet) measured:

(1) At the forward main transverse watertight bulkhead; and

(2) From the deepest waterline to:

(i) The top of the bulkhead deck on a flush deck vessel; or

(ii) If a vessel has a stepped bulkhead deck, the line shown in Figure 179.220(b); or

(iii) If a vessel has an opening port light below the bulkhead deck, the line shown in Figure 179.220(c).

b = the freeboard in meters (feet) measured:

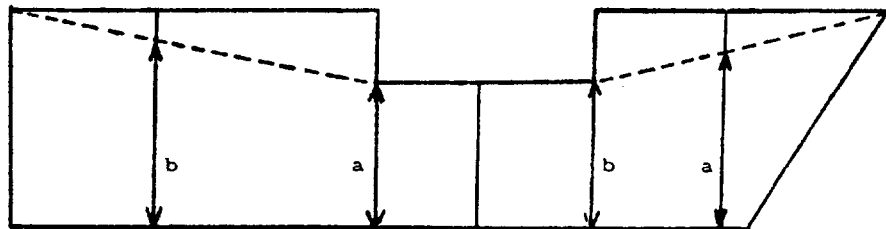
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- (1) At the aft main transverse watertight bulkhead; and
- (2) From the deepest waterline to:
- (i) The top of the bulkhead deck on a flush deck vessel; or
- (ii) If a vessel has a stepped bulkhead deck, the line shown in Figure 1 to § 179.220(b); or

**Figure 1 to § 179.220(b)**

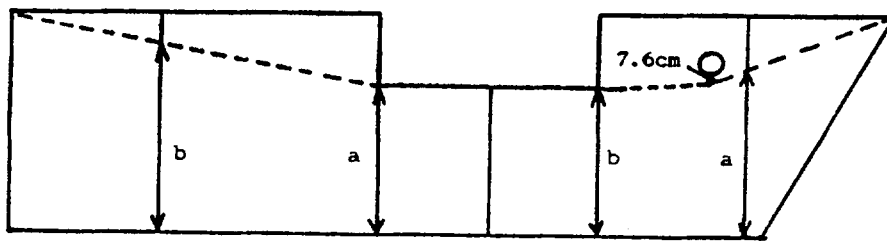
**Freeboard Measurement -**  
**Vessel with Stepped Bulkhead Deck**



**(a and b shown for two sample compartments)**

Figure 2 to § 179.220(b)

Freeboard Measurement -  
Vessel with Stepped Bulkhead Deck and  
a Port Light Below the Bulkhead Deck



(iii) if a vessel has an opening port light below the bulkhead deck, the line shown in Figure 2 to § 179.220(b).

[CGD 85-080, 61 FR 971, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

**§ 179.230 Damage stability requirements.**

A vessel which, in accordance with § 179.212, must meet the requirements of §§ 171.070 through 171.073 in subchapter S of this chapter for Type II subdivision, shall also meet the damage stability requirements of § 171.080 in subchapter S of this chapter.

[CGD 85-080, 61 FR 971, Jan. 10, 1996, as amended at 62 FR 51357, Sept. 30, 1997]

**§ 179.240 Foam flotation material.**

(a) Foam may only be installed as flotation material on a vessel when approved by the cognizant OCMI.

(b) If foam is installed as flotation material on a vessel, the owner shall ensure that the following tests are conducted and requirements are met, to the satisfaction of the cognizant OCMI:

(1) All foam must comply with MIL-P-21929C. The fire resistance test is not required.

(2) Foam may be installed only in void spaces that are free of ignition sources, unless the foam complies with the requirements of 33 CFR 183.114;

(3) Foam may be installed adjacent to fuel tanks only if the boundary between the tank and the space has double continuous fillet welds;

(4) The structure enclosing the foam must be strong enough to accommodate the buoyancy of the foam;

(5) Piping and cables must not pass through foamed spaces unless they are within piping and cable ways accessible from both ends;

(6) Blocked foam must:

(i) Be used in each area that may be exposed to water; and

(ii) Have a protective cover, approved by the cognizant OCMI, to protect it from damage;

(7) A water submergence test must be conducted on the foam for a period of at least 7 days to demonstrate to the satisfaction of the cognizant OCMI that the foam has adequate strength to